Surgical Management of Pulmonary Coccidioidomycosis with Video-Assisted Thoracic Surgery (VATS)

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Objective

- A basic review of Pulmonary Coccidioidomycosis and disease sequelae
- Discuss which patients may be considered for surgical resection
- Review personal current results of VATS for resection
Coccidiodomycosis

- Acute pulmonary infection may manifest as patchy unilateral or bilateral infiltrates

- 5-10% result in residual pulmonary sequelae such as persistent cavitary lesions or nodules

- Most are self-limiting, however, chronic relapsing illness, complications, and persistent symptoms may require surgical intervention
Patients for Surgical Consideration

- Diagnostic Dilemmas
- Symptomatic: chronic cough, pain, hemotysis, fatigue, dyspnea, night sweats
- Non-resolving chronic cavities
- Current or planned Immunosuppression
- Complications: i.e. Pneumothorax & empyema
Case # 1

- 45-year old woman with history of metastatic colon cancer

- Newly diagnoses PET + lesion RLL suspicious for lung carcinoma versus metastatic colon cancer

- Interventional core needle biopsy “non-diagnostic”

- Cocci serology +
Movie Clip Case#1
Case #2

- 44-year old male physician with known history of cocci infection on Fluconazole 400 mg daily for 18 months

- Presents to local emergency room with severe chest pain right.
Case #3

- 52-year old male with history of renal failure on dialysis undergoing evaluation for transplantation

- Cavitary lesion in left lower lobe, treated now for 9 months with fluconazole (4 months) and voriconazole
Surgical Interventions

From 1998-2008:

- 1498 patients evaluated with pulmonary cocci
- 86 (6%) surgical intervention (48:38 f/m; 58 yrs)
- 2/3 of these surgeries were done with open thoracotomy
  - 98-2004 22% VATS
  - 2004-08 45% VATS
- 21% post operative complications
- 2% mortality
Symptomatic Nodular and Cavitary Coccidioidomycosis
Treatment Algorithm

Symptomatic Nodular Disease
Known Coccidioidomycosis

- ≥3 months anti-fungal treatment
  - Resolved
  - Continued

  - Symptomatic
  - Asymptomatic

Reassessment:
Infectious Disease Specialist
Consider Surgical Resection

Cavitary Coccidioidomycosis Disease

- With Pneumothorax, Rupture, Effusion
  - Surgical Resection: VATS when possible

- Uncomplicated
  - ≥3 months anti-fungal treatment

  - Resolving

  - Progressing
  - Symptomatic No response

Reassessment:
Infectious Disease Specialist
Consider Surgical Resection

Whether or not anti-fungal treatment is continued is based on infectious disease specialist's recommendations.
Most Recent Data

From 2008 – Present:

- 53 surgical interventions (27:26 f/m; mean 53 yrs)
- 93% were treated with VATS procedure
- 7% Post operative complications
- **no** in hospital post operative mortalities
- mean hospitalization 3.8 days
Conclusion

- Coccidioidomycosis is being diagnosed, treated and referred more promptly

- Patients with non-resolving pulmonary lesions are being referred for surgical intervention earlier

- The majority requiring surgical intervention can be treated with VATS resulting in few complications and short hospitalization with rapid recovery and return to function